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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
07/676,690	03/28/1991	JO ANN M. CANICH	P-1733	7543

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EXAMINER

RABAGO, ROBERTO

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 03/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

07/676,690

Applicant(s)

CANICH, JO ANN M.

Examiner

Roberto Rábago

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 34 and 37-42 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 34,37,38 and 40-42 is/are rejected.
- 7) ☒ Claim(s) 39 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

1. Prosecution in this application is reopened in view of newly located references.

Claim Rejections - 35 USC § 102

2. Claims 34, 37 and 41 are rejected under 35 U.S.C. 102(e) as being anticipated by Tomotsu et al. (US 5,276,117).

Reference Example 1 discloses polymerization of styrene in the presence of a catalyst composition comprising: (a) alumoxane as the reaction product of trimethylaluminum and water, (b) ethylene glycol, and (c) pentamethylcyclopentadienyl trimethoxide. Component (c) is within the scope of the first structure (A) of instant claim 34, and upon contact with (b) would form the required complex wherein claimed component L is present with a coefficient greater than zero and less than three. The Al:M ratio of Example 1 is 100. Reference examples 2-5 provide further examples comprising different neutral Lewis bases for inclusion in the catalyst composition.

Claim Rejections - 35 USC § 103

3. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomotsu et al. (US 5,276,117).

Reference Example 1 discloses polymerization of styrene in the presence of a catalyst composition comprising: (a) alumoxane as the reaction product of trimethylaluminum and water, (b) ethylene glycol, and (c) pentamethylcyclopentadienyl

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trimethoxide. Component (c) is within the scope of the first structure (A) of instant claim 34, and upon contact with (b) would form the required complex wherein claimed component L is present with a coefficient greater than zero and less than three.

Reference examples 2-5 provide further examples comprising different neutral Lewis bases for inclusion in the catalyst composition. Missing from the cited examples is the use of a component (A) within the instantly claimed scope. However, patentee discloses the use of cyclopentadienyltitanium trimethoxide at col. 2, line 59-60, which is within the scope of claim 42. One of ordinary skill in the art would be motivated to use cyclopentadienyltitanium trimethoxide in any of working examples 1-5 because patentee has suggested this species as an alternative for component (A) among a reasonably small group of alternatives, and is among about twenty specifically named structures (col. 2, line 52 through col. 3, line 22). Reasonable success would be expected when using such combinations because the reference disclosure has suggested that an effective process of styrene polymerization would result.

4. Claims 34, 37, 38 and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell, Jr. et al. (US 5,045,517).

The reference discloses a styrene polymerization catalyst composition comprising polymethylaluminoxane and a complex of formula CpTiX_3 , wherein X is halide, -OR or -NR₂ (col. 1, lines 27-46). Reference Examples 2-13 disclose polymerization of styrene in the presence of a catalyst composition comprising polymethylaluminoxane and one of cyclopentadienyltitanium tris(phenoxide),

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cyclopentadienyltitanium tris(ethoxide), indenyltitanium tris(dimethylamide), cyclopentadienyltitanium tris(dimethylamide), pentamethylcyclopentadienyltitanium tris(phenoxide), and pentamethylcyclopentadienyltitanium phenoxy dichloride, wherein the Al:M ratio is 500. Missing from the examples is the stated presence of claimed component L. However, the inclusion of one or more alcohol molecules in the metallocene structure is stated as an alternative embodiment at col. 2, lines 31-39. One of ordinary skill in the art would be motivated to use species analogous to those of the working examples, except further including in the metallocene structure a molecule such as an alcohol, because patentee has suggested such embodiments, with reasonable success expected.

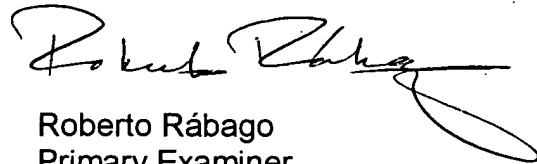
5. Claim 39 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The newly cited references disclose only complexes within the instantly claimed scope which include titanium. No motivation can be found for modifying the reference disclosures to emerge with the claimed Zr and Hf complexes.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberto Rábago whose telephone number is (571) 272-1109. The examiner can normally be reached on Monday - Friday from 8:00 - 4:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Roberto Rábago
Primary Examiner
Art Unit 1713

RR
March 27, 2006